Original.

10-524

Form 504

[redacted]

Partially applied to drawing of chart 287 - Apr. 1, 1937 - J.T.W.
applied to new compilation of Chart 287, June 1938, J.G.L.
" " Chart 369 April 24, 1939 L.M.Z.

Form 537a
Ed. Nov. 1929

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY

REG. NO.

TOPOGRAPHIC TITLE SHEET T5277

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 63

REGISTER NO. T-5277.

State New Jersey.

General locality Hackensack River, ~~(Southern part)~~

Locality

Scale 1:10,000 * Date of photographs- July 3, 1932, ~~to~~
Date of Compilation- May 6, 1936

Vessel Air Photo Compilation Party No. 12.
Reviewed and recommended for approval- Roswell C. Bolstad
Chief of party Roswell C. Bolstad.

Surveyed by See STATISTICS SHEET, page 2 of this report.

Inked by R. L. Fisher

Heights in feet above ---- to ground to tops of trees

Contour, Approximate contour, Form line interval ---feet

Instructions dated November 15th., 19 32

Remarks: Compiled on a scale of 1:10,000 and printed by photo-lithography.

* Black and White print - scale 1/10,000.

* STATISTICS *

on

COMPILATION, FIELD NO. 63, REGISTER NO. T-5277.

Photographs, No.	Date	Time	Tide
66-47-65 to 69 incl.	July 3, 1932	(not available)	centers fall to west of compilation S.W. corner
66-26-39 to 46 incl.	" " "	"	"
66-47-49 to 56 incl.	" " "	"	"
66-47-5 to 6 incl.	" " "	"	centers fall east of compilation N.E. corner

	BY	Date From	To
SCALE FACTOR (1.000)	R.C.Bolstad R.C. Bolstad	(Previously determined)	
PROJECTION	W.Barasch W. Barasch	6/22/34 - 6/23/34	
PROJECTION CHECKED	W.D.Ayers W.D. Ayers	6/23/34	

[redacted]

COMPILER'S REPORT

for

AIR PHOTO TOPOGRAPHIC SHEET, FIELD NO. 63.

GENERAL INFORMATION.

The Air-photo Field Inspection report attached to the descriptive report for compilation, register number T-5112, furnished the necessary information for the compilation ~~of this sheet~~. Additional information was obtained by Mr. R.L.Fisher who is acquainted with this locality and who detailed this compilation.

This sheet was compiled from single lens photographs taken by the Aero Service Corporation, 1612 Chancellor St., Philadelphia, Pa., in the summer of 1932 (See STATISTICS sheet) with a camera equipped with a special lens (Orthomessar 8" focal length). The original negatives were on a scale of about 1:21,800, and enlargments were made to 1:10,000 scale by using the old topographic sheets to bring the image to the proper scale. No information was available in regard to the time of day at which the photos were taken; it appears that no record was retained by the Corporation. The appearance of the shadows on the photographs will give some indication as to the approximate time of day.

CONTROL.

(a) Sources.

Control for the compilation ~~of this sheet~~ was obtained from the following sources:-

(1) Triangulation, 1930-33, Lt. R.W.Woodworth.
(2) " , 1913-14, _____.
(3) " , 1933, Lt. J.Bowie.
(4) U.S.E.Stations which were used as supplementary control.

All control was plotted on the North American 1927 Datum. The final office adjusted positions on this datum were used; where not available the field computation positions on a N.A. datum were used after being adjusted to the 1927 datum by applying a correction determined by comparisons between common stations on the two datums.

(b) Errors.

No error in the position of any of the above listed control established by this bureau was discovered while making the radial line plot.

(c) Discrepancies.

No appreciable errors were found in any of the U.S.E.D. stations.

COMPILATION.

(a) Method.

The usual radial line method of plotting was used in the compilation of this sheet.

The U.S.E.D. stations as listed in the back of this report were used as supplementary control for the radial plot. They were plotted on an aluminum sheet from their coordinate positions (at 10,000 scale) and transferred to the celluloid compilation sheet by means of fitting to common stations (i.e., coordinate positions of triangulation stations on the

× By direct comparison, placing celluloid compilation T-5277 over survey T-6124 shows that there is no difference of more than 1 meter in the positions of stations listed on the opposite page. [illegible] is not [illegible] table. [illegible] station is [illegible] probably [illegible] when [illegible] has been incorrectly scaled from T-6[illegible] [illegible]. B.G.T.

Aug. 27, 1936.

aluminum sheet fitted to their corresponding geographical position on the celluloid sheet). The transferred poition of the U.S.E.station was not accepted unless it adherred strictly to the photo plot, as there is sufficient triangulation control to independently establish the plot.

Topographic stations TRY, EM, KAN, & WES, as shown on this compilation, were obtained from the graphic control sheet of Lieut. Rittenberg, 1934, register number T-6124. They have been described by him on form 524.

(b) Adjustments of Plot.

No unusual adjustments of the plot were necessary. A slight adjustment was required along the eastern boundary where a junction is made with the 1-5,000 scale compilations. Because the 1-5,000 scale photos gave a somewhat weak determination in a longitudinal direction the 1-5,000 scale plot and the 1-10,000 scale plot were worked together, which gave a good location of all radial points.

(c) Information From Other Sources.

Blueprints secured from the Railroad Companies furnished information relative to complicated track systems. Maps of the Port of New York Authority (reduced from 1:200 to 1:10,000 scale) were used as an aid in correctly compiling this ~~sheet~~.

(d) Interpretation.

Lieut. Rittenberg's graphic control station TRY and WES were found to check out correctly with the photo plot. However, EM, KAN and SOU were found to be in error as listed by Lieut. Rittenberg. SOU is the same station as triangulation station "Kearney Point, Western Electric Co., South Twin Chy. 1931" and is in error 3.4 m. in lat. and 3.9 m. in long. The correct positions will be found in the list of recoverable stations in the back of this report. See opposite page X

No attempt has been made to show the street railway systems in the streets. However, at latitude 40°-44.5', longitude 74°-03.2', the elevated tracks have been shown. In the area lat. 40°-44.6', long. 74°-06', there has been shown the trackage, much of which is elevated.

In the area 40°-42.8', 74°-05.8' a new concrete road has been constructed since the 1932 photos were taken. This road appears on the 5,000 scale photos which are of a latter date. One of the photos V-152-870N-8 was not available as it is in the Washington Office. The portion of the highway covered by this photo should be checked in the Washington Office.

In the area 40°-43.5', 74°-05.8' a small length of railroad is shown. This is all that remains as the rest was removed when the new highway, mentioned in the preceeding paragraph, was constructed.

At lat. 40°-43.5', long. 74°-06.3 the railroad tracks may be slightly out of position as they did not show clearly on the photographs.

The Port of New York Authority Midtown-Hudson Tunnel maps, MHF-2A, & MH-F-2, do not agree perfectly with this compilation. There are some differences which are beleived to be due to changes, in some cases, since this 1930 survey was made. The compilation was made from 1932 photos.

The usual graphic symbols were used as approved by the Board of Surveys and Maps (1932) and no great difficulty was experienced in interpreting the photographic detail.

(e) Names.

The geographical names shown on this compilation have been listed on the special forms in the back of this report. Street names as shown

COMPARISON WITH OTHER SURVEYS.

(a) Junctions.

Proper junctions with adjoining ~~sheets~~ compilations have been made and are in agreement. However, the Public Service Trolley line in lat. 40°-44.9' was not shown on compilation T-5332 and should be added by the Washington Office.

MH-F-2A & MH-F-2.

The Port of New York Authority Midtown Tunnel maps do not agree perfectly as has been previously mention in the paragraph "Interpretation".

LANDMARKS.

The list of landmarks for the area covered by this compilation were previously submitted, Feb. 22, 1933, by Lieut. R.W.Woodworth. (Chart letter 222.) (1933).

LIST OF RECOVERABLE STATIONS.

This list includes all recoverable objects shown by a small black circle on this compilation and described on form 524.

NAME	LAT.	LONG.	METHOD OF DETERMINATION.
(Wes)W.Flgpole W.E.Co.	40°-43.4'	74°-07.0'	A.C.S. T-6124.
(Em)Brick Stack	40°-43'-455.Om.	74°-07'-95.Om.	A.P.T.* +
(Kan)Water Tank	40°-43'-418.Om.	74°-07'-122.Om.	A.P.T.* +
(Try)U.S.E.-N.B.15	40°-42.7'	74°-06.4'	A.C.S. T-6124.
HK-3 (U.S.E.)	40°-43.6'	74°-05.8'	A.P.T.
HK-4 (U.S.E.)	40°-43.7'	74°-06.1'	A.P.T.
HK-8 (U.S.E.)	40°-44.5'	74°-04.9'	A.P.T.
HK-15(U.S.E.)	40°-45.3'	74°-05.7'	A.P.T.
HK-16(U.S.E.)	40°-45.2'	74°-05.8'	A.P.T.
HK-17(U.S.E.)	40°-45.5'	74°-05.5'	A.P.T.
HK-18(U.S.E.)	40°-45.6'	74°-05.7'	A.P.T.
HK-26(U.S.E.)	40°-46.7'	74°-05.5'	A.P.T.
HK-27(U.S.E.)	40°-46.6'	74°-05.4'	A.P.T.
HK-31(U.S.E.)	40°-47.2'	74°-04.9'	A.P.T.

LEGEND:- A.C.S. T-6124 denotes Aluminum Control Sheet, register no. T-6124.
A.P.T.* denotes new location by Air Photo Topography.
A.P.T. denotes location by Air Photo Topography.
+ The new location by "air photo topography" almost coincides with the location by T-6124.

F.A.M.

BRIDGES.

The bridge data for the Hackensack River bridges as shown on the overlay sheet for this compilation was obtained from the Atlantic Coast Pilot, Section B, pages 314 & 315. These values agree exactly with U.S. Eng. list of Bridges for 1935 except that the Eng. datum is HW whereas the Coast Pilot use datum is M.H.W. Since the clearances were originally taken from the Engineer Bridge list the clearances are given on this compilation as of High water. B.B.B.

RECOMMENDATIONS FOR FURTHER SURVEYS.

This compilation ~~of this sheet~~ is beleived to have a probable error of not over 2 meters in position for well defined detail of importance for charting, and not over 4 meters for other detail. It is understood that the widths of railroad tracks, roads, and similar detail may be exaggerated slightly in order to avoid closing up of lines during the photo-lithographic process.

To the best of my knowledge and belief this sheet is complete in all detail of importance for charting, within the accuracy specified, and no additional surveys are required.

Submitted by-

May 16, 1936.

R.L. Fisher.
R. L. Fisher, Draftsman.

	Remarks	Decisions
1	Caution!! on overlay Mary Ann Cr. unnamed:	
2	Berry Creek Cgag/ called Berry Creek	
3		
4		
5	This barely gets by: more correct would be Croma Kill, the "creek" being a redundancy:	Cromakill
6	but since the chart, and USGS 7½ map, uses Croma Kill Creek, it is passed: see T5278 line 13.	New Durham
7	T17 has New Durham	
8	advise keep this out: cannot verify: and too many subdivision names already.	
9	T17 has "Bergen"	
10		
11	This form suggested: "West Shore (N.Y.C.) R.R."	
12	another form is: "N.Y.S. & W. (Erie) R.R."	
13	This also acceptable: "W.R.R. (Erie) of N.J."	
14	official abbrev. is: "Penna. R.R."	
15		
16		
17		
18	Also: D.L. & W.R.R.	
19		
20	T3496 has "Sawmill"	Sawmill
21		
22		

[redacted]

GEOGRAPHIC NAMES

Survey No. T-5277.
Air Photo Compilation.

Name on Survey	A On Chart No. 287, 369.	B On previous survey No. T7.. T3491 T3490	C On U.S. quadrangle Maps T5113	D From local information / Air-Photo Field Inspection.	E On local Maps / N.Y. Port Auth.	F P.O. Guide or Map	G Rand McNally Atlas	H U.S. Light List / Railway	K Hwy. Maps.	T5277
Berry Creek ✓	* x	✓ ✓ ✓	✓	3 men x					x	1
Mary Ann Creek ✓	* x	✓								2
Anderson Creek ✓	* ✓ x	✓								3
Mill Creek ✓	* x		✓	✓	✓					4
Cromakill Creek ✓	* x		✓	✓	✓					5
New Durham ✓			✓	2 men ✓ x	✓ x		✓		x	6
Secaucus ✓	* x	✓ ✓ (T1398)	✓	5 men ✓ x	✓ x	✓	✓		x	7
~~Homestead~~									x	8
North Bergen ✓		✓	✓	5 men x	✓ x	✓	✓		x	9
Union City ✓				5 men x	x	✓	✓	#	x	10
West Shore R.R. ✓	* x			7 men x	x		✓	✓	x	11
New York, Susquehanna and Western R.R. ✓	* x			5 men x	x		✓	✓	x	12
Northern R.R. of New Jersey ✓	* x			5 men x	x		✓	✓	x	13
Pennsylvania R.R. ~~(N.Y. Division)~~ ?	*			3 men x	x		✓	✓		14
Erie Railroad ✓	x		x	7 men x	x		✓	✓	x	15
Penhorn Creek ✓	* ✓	(T1398)	✓	4 men ✓ x	✓ x				x	* 16
Division Creek ✓	* x	✓	✓	✓						17
Delaware, Lackawanna and W.R.R. (Boonton Br.) ?				4 men x	x		✓	✓		18
Kingsland Creek ✓	* x	✓	✓	2 men x	✓ x					19
Saw Mill Creek ✓	* ✓ x	✓	✓		✓ x				x	20
Hackensack River ✓ T100	* ✓ x	(T1398) ✓ ✓	✓ x	5 men ✓ x	✓ x		✓		x	21
~~Erie R.R. Newark Branch.~~ ✓			x	7 men x	x					22
Erie R.R. ~~Greenwood Lake~~ ✓	*		✓	5 men ✓ x	✓ x		✓	✓		23
Snake ~~Laurel~~ Hill ✓	* ✓	(T1398) ✓	✓	3 men x	✓				x	24
*~~Snake~~ Hill / Little Snake Hill ✓	*	(T1398) ✓	✓	2 men x	✓					25
Marion ✓			✓ x	2 men ✓ x	✓ x		✓	-	x	* 26
Jersey City ✓	* ✓ x		✓ x	5 men ✓ x	✓ x	✓	✓		x	27

Names underlined in red approved on 7/13/36 by [initials]

	Remarks	Decisions
1	unable to verify; name appears unnecessary, crowding the chart.	
2		
3		
4	cannot verify these various "Branches." SEE Railway Guide.	
5	T17 verifies name "Bergen" *Shown on chart 287 as South Bergen. In my	WEST
6	Record, Pg. 13 I recommended South Bergen be removed; though even West Bergen seems	
7	unnecessary.	
8	Official abbreviation is: "Penna. R.R."	
9		
10	but see first prop; line 18	
11	called "Berry Creek" on overlay	Canal
12		
13		
14		
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20		
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22		
23		
24		
25		
26		
27		

GEOGRAPHIC NAMES

Survey No. T-5277
Air Photo Compilation.

Name on Survey	A On Chart No. 287, 369	B On previous survey No.	C On U.S. quadrangle Maps	D From local information (Air-photo Field Inspection.)	E On local Maps (N.Y. Port Auth.)	F P.O. Guide or Map	G Rand McNally Atlas	H U.S. Light List	K Hwy. Maps.	
~~Kearny Point~~				3 men x						1
Newark Bay	* x		x	5 men x	x				x	2
Droyers Point	* x				x					3
~~[illegible]~~				2 men x	x					4
*West Bergen	*		x							5
Central R.R. of N.J. (Newark Branch)	*			2 men x	x					6

[redacted]

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N.J. STATION x = 2,170,000 y = 710,000

x	2,170,000	log S_g	5.23044414
K	2	log (1200/3937)	9.4840158 3
x' $(=x-K)$	+ 170,000	log $(1/R)$	1086
$x'^3/(6\rho_o^2)_g$	− 1,872	log S_m	4.71447083
S_g	169,448.128	cor. arc to sine	− 476
		log S_1	4.71446607
3 log x'	15.69134676	log A	8.50909860
log $1/(6\rho_o^2)_g$	4.58102135 −22	log sec ϕ	0.12078162 [8 written over 6]
log $x'^3/(6\rho_o^2)_g$	0.2723681	log $\Delta\lambda_1$	3.34434629 [4 written over 2]
		cor. sine to arc	+ 831
log S_m^2	9.428942	log $\Delta\lambda$	3.34435460 [8 written over 6]
log C	1.340265	$\Delta\lambda$	+ 2209.808″ [9 written over 8]
log $\Delta\phi$	0.769207		
y	710,000		
ϕ' (by interpolation)	40° 46′ 56.997″	λ (central mer.)	74° 40′ ″
$\Delta\phi$	− 5.878	$\Delta\lambda$	− 36 49.808 [9 written over 8]
ϕ	40 46 51.119	λ	74 03 10.192 [1 written over 2]
	1576.8		239.0

1575.3 239.0

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1A\sec\phi$

log S_1=log S_m−cor. arc to sine

log $\Delta\lambda$=log $\Delta\lambda_1$+cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N.J. STATION X = 2,160,000 Y = 710,000

x	2,160,000.	$\log S_g$	5.204115 74
K	2	$\log (1200/3937)$	9.4840 1583
x' $(=x-K)$	160,000.	$\log (1/R)$	1086
$x'^3/(6\rho_o^2)_g$	1.561	$\log S_m$	4.688 14243
S_g	159,998.439	cor. arc to sine	422
		$\log S_1$	4.688 13821
$3 \log x'$	15.612 35.994	$\log A$	8.509 04860
$\log 1/(6\rho_o^2)_g$	4.581 0213 -2	$\log \sec \phi$	0.120 78303
$\log x'^3/(6\rho_o^2)_g$	0.193 3812	$\log \Delta\lambda_1$	3.318 01984
		cor. sine to arc	+ 736
$\log S_m^2$	9.376 285-	$\log \Delta\lambda$	3.318 02720
$\log C$	1.340 2655 -10	$\Delta\lambda$	+ 2079".827
$\log \Delta\phi$	0.716 55-0		
y	710,000.		
ϕ' (by interpolation)	40° 46' 56".997	λ (central mer.)	74° 40' "
$\Delta\phi$	5.207	$\Delta\lambda$	- 34 39.827
ϕ	40 46 51.790	λ	74 05 20.173
	1597.5		473.0

1597.5 473.0

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11521

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N.J. STATION $x =$ 2,170,000 / $Y =$ 700,000

x	2,170,000 ✓	$\log S_\varrho$	
K	2	$\log (1200/3937)$	9.4840158 3
x' (=$x-K$)	+170,000	$\log (1/R)$	
$x'^3/(6\rho_o^2)_\varrho$	−	$\log S_m$	
S_ϱ		cor. arc to sine	−
		$\log S_1$	4.7144660 7 ✓
3 log x'		$\log A$	8.5090993 ✓
$\log 1/(6\rho_o^2)_\varrho$		$\log \sec \phi$	0.1206024 4 ✓
$\log x'^3/(6\rho_o^2)_\varrho$		$\log \Delta\lambda_1$	3.3441678 2 ✓
		cor. sine to arc	+ 831 ✓
$\log S_m^2$	9.4289422 ✓	$\log \Delta\lambda$	3.3441761 3 ✓
$\log C$	1.3398477 ✓	$\Delta\lambda$	2208.900 ✓
$\log \Delta\phi$	0.7687899 ✓		
y	700,000 ✓		
ϕ' (by interpolation)	40° 45′ 18.″183 ✓	λ (central mer.)	74° 40′ ″
$\Delta\phi$	− 5.872 ✓	$\Delta\lambda$	− 36 48.900 ✓
ϕ	40 45 12.311	λ	74 03 11.100
	379.7		2208.4

379.7 2208.4

Explanation of form:

$x'=x-K$

$S_\varrho=x'-\frac{x'^3}{(6\rho_o^2)_\varrho}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_\varrho$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11521

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N.J. STATION x = 2,170,000 Y = 700,000

x	2,170,000	$\log S_g$	
K	2	$\log (1200/3937)$	9.4840158 3
x' $(=x-K)$	+170,000	$\log (1/R)$	
$x'^3/(6\rho_o^2)_g$	−	$\log S_m$	
S_g		cor. arc to sine	−
		$\log S_1$	4.7144660 7
$3 \log x'$		$\log A$	8.5040993 0
$\log 1/(6\rho_o^2)_g$		$\log \sec \phi$	0.1206024 4
$\log x'^3/(6\rho_o^2)_g$		$\log \Delta\lambda_1$	3.3441678 2
		cor. sine to arc	+ 831
$\log S_m^2$	9.4289422	$\log \Delta\lambda$	3.3441761 82
$\log C$	1.3398470	$\Delta\lambda$	2208.900
$\log \Delta\phi$	0.7687892		
y	700,000		
ϕ' (by interpolation)	40° 45′ 18.″183	λ (central mer.)	74° 40′ ″
$\Delta\phi$	− 5.872	$\Delta\lambda$	− 36 48.900
ϕ	40 45 12.311	λ	74 03 11.100
	379.7		260.4

379.7 260.4

Explanation of form:

$x'=x-K$

$S_g=x'-\frac{x'^3}{(6\rho_o^2)_g}$

$S_m=\frac{1}{R}\left(\frac{1200}{3937}\right)S_g$

R=scale reduction factor

ϕ' is interpolated from table of y

$\Delta\phi=C\,S_m^2$

$\phi=\phi'-\Delta\phi$

$\Delta\lambda_1=S_1 A \sec\phi$

$\log S_1=\log S_m-$cor. arc to sine

$\log \Delta\lambda=\log \Delta\lambda_1+$cor. arc to sine

$\lambda=\lambda$ (central mer.)$-\Delta\lambda$

U. S. GOVERNMENT PRINTING OFFICE 11—11521

Form No. 743
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Ed. May 1935

GEODETIC POSITIONS FROM TRANSVERSE MERCATOR COORDINATES

STATE N.J. STATION Y X = 2,170,000 690,000

x	2,170,000,00	$\log S_g$	
K	2,.	$\log (1200/3937)$	9.4840 1583
x' $(=x-K)$	+170,000,1	$\log (1/R)$	
$x'^3/(6\rho_o^2)_g$	−	$\log S_m$	
S_g		cor. arc to sine	−
		$\log S_1$	4.7144 6607 ✓
3 log x'		$\log A$	8.5091 0000 ✓
$\log 1/(6\rho_o^2)_g$		$\log \sec \phi$	0.1204 2325 ✓
$\log x'^3/(6\rho_o^2)_g$		$\log \Delta\lambda_1$	3.3439 8932 ✓
	✓	cor. sine to arc	+ 830 ✓
$\log S_m^2$	4.428942	$\log \Delta\lambda$	3.3439 9762 ✓
$\log C$	1.339429 ✓	$\Delta\lambda$	2207.993 ✓
$\log \Delta\phi$	0.768371 ✓		
y	690,000 ✓		
ϕ' (by interpolation)	40° 43′ 39.368″	λ (central mer.)	74° 40′ ″
$\Delta\phi$	− 5.866″ ✓	$\Delta\lambda$	− 36 47.993 ✓
ϕ	40 43 33.502 ✓	λ	74 03 12.007 ✓

[redacted]

Form No. 743
DEPARTMENT OF COMMERCE

[redacted]

Geodetic positions from Lambert coordinates

State Ga. Cy. - Long Id. Station X = 1,970,000 Y = 190,000

x	1,970,000 ✓	$R_b + A$	24,462,545.30 ✓
C	2	y	190.000 ✓
x' (= x − C)	− 30,000 ✓	$R_b + A - y$	24,272,545.30 ✓
tan θ	0.001235964322	R	
θ	0° 04′ 14.93581 ✓		
	− 254.93581 ✓	y	190,000 ✓
$\frac{\theta}{\ell}$ (= Δλ)	− 389.761 ✓	y″	− 18.54 ✓
	✓	y′	189,981.46 ✓
λ (central mer.)	74° ′ ″		
− Δλ	+ 06 29.761	φ (by interpolation)	40° 44′ 49.143 ✓
λ	74 06 29.761		1515.8
	698.2		1512.8
	697.0		

X = 1,970,000
Station Y = 180,000

x	1,970,000 ✓	$R_b + A$	24,462,545.30 ✓
C	2	y	180,000 ✓
x' (= x − C)	− 30,000 ✓	$R_b + A - y$	24,282,545.30 ✓
tan θ	0.001234545329	R	
θ	0° 04′ 14.83082		
	− 254.83082 ✓	y	180,000. ✓
$\frac{\theta}{\ell}$ (= Δλ)	− 389.601 ✓	y″	− 18.53 ✓
		y′	179,981.47 ✓
λ (central mer.)	74° ′ ″		
− Δλ	+ 06 29.601 ✓	φ (by interpolation)	40° 43′ 10.330 ✓
λ	74 06 29.601 ✓		318.6
	694.7		317.6
	693.2		

$$\tan\theta = \frac{x - C}{R_b + A - y}$$

$$\Delta\lambda = \frac{\theta}{\ell}$$

$$\lambda = \lambda\,(\text{central mer.}) - \Delta\lambda$$

$$R = (R_b + A - y)\sec\theta$$

$$y'' = 2R\sin^2\frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x′ in computation of coordinates

R_b is map radius of lowest parallel

A is value of y′ for R_b; in most cases it is zero

φ is interpolated from table of y′

(M-28)

Geodetic positions from Lambert coordinates

State Long Island Station x = 1,980,000 / y = 200,000

x	1,980,000	$R_b + A$	24,462,545.30
C	2	y	200,000
x' (= x − C)	− 20,000	$R_b + A - y$	24,262,545.30
tan θ	0.000824315823	R	
θ	0° 02′ 50.027305		
	− 170.027305	y	200,000
$\frac{\theta}{\ell}$ (= Δλ)	−259.948	y″	− 8.24
		y′	199,991.76
λ (central mer.)	74° ′ ″		
− Δλ	4 19.948	φ (by interpolation)	40° 46′ 28.057
λ	74 04 19.948		865.4 m
	467.8 m		863.4
	466.8		

Station x = 1,980,000 / 190,000

x	1,980,000	$R_b + A$	24,462,545.30
C	2	y	190,000
x' (= x − C)	− 20,000	$R_b + A - y$	24,272,545.30
tan θ	0.000823976215	R	
θ	0° 02′ 49.955726		
	− 169.955726	y	190,000.
$\frac{\theta}{\ell}$ (= Δλ)	− 259.841	y″	− 8.24
		y′	189,991.76
λ (central mer.)	74° ′ ″		
− Δλ	+ 4 19.841	φ (by interpolation)	40° 44′ 49.245
λ	74 04 19.841		1519.0 m.
	465.5		1516
	464.5		

$$\tan\theta = \frac{x - C}{R_b + A - y}$$

$$\Delta\lambda = \frac{\theta}{\ell}$$

$$\lambda = \lambda(\text{central mer.}) - \Delta\lambda$$

$$R = (R_b + A - y)\sec\theta$$

$$y'' = 2R\sin^2\frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x′ in computation of coordinates

R_b is map radius of lowest parallel

A is value of y′ for R_b; in most cases it is zero

φ is interpolated from table of y′

(M-28)

Geodetic positions from Lambert coordinates

State Long Island Station X = 1,980,000 Y = 180,000

x	1,980,000 ✓	$R_b + A$	24,462,445.30 ✓
C	2	y	180,000 ✓
x' (= x − C)	− 20,000 ✓	$R_b + A - y$	24,282,545.30 ✓
tan θ	0.000 82363688 X6	R	
θ	0 ° 02 ′ 49.″88727 6		
	− 169.″887276 ✓	y	180,000. ✓
$\frac{\theta}{\ell}$ (= Δλ)	− 259.734 ✓	y″	− 8.24 ✓
		y′	179.991.76 ✓
λ (central mer.)	74° ′ ″ ✓		
− Δλ	4 19.734 ✓	φ (by interpolation)	40 ° 43 ′ 10.″432 ✓
λ	74 04 19.734 ✓		321.8 m.
	463.2		320.8 m
	4622		

Station

x		$R_b + A$	
C		y	
x' (= x − C)		$R_b + A - y$	
tan θ		R	
θ	° ′ ″		
	″		
$\frac{\theta}{\ell}$ (= Δλ)		y	
		y″	−
		y′	
λ (central mer.)	° ′ ″		
− Δλ		φ (by interpolation)	° ′ ″
λ			

$$\tan\theta = \frac{x - C}{R_b + A - y}$$

$$\Delta\lambda = \frac{\theta}{\ell}$$

$$\lambda = \lambda(\text{central mer.}) - \Delta\lambda$$

$$R = (R_b + A - y)\sec\theta$$

$$y'' = 2R\sin^2\frac{\theta}{2}$$

$$y' = y - y''$$

C is constant added to x′ in computation of coordinates

R_b is map radius of lowest parallel

A is value of y′ for R_b; in most cases it is zero

φ is interpolated from table of y′

(M-28)

REVIEW OF AIR PHOTO COMPILATION T-5277 (1932)
Scale 1:10,000

Comparison with Graphic Control Survey

T-6124 (1934), 1:10,000

Survey T-6124 covers Newark Bay. At the C.R.R. of New Jersey bridge (40° 43.2', 74° 06.3') there is a discrepancy of 7 meters of position. T-6124 is in error here and the described station S. Fender, H. R. (d) has not been transferred to the compilation and its description card has been destroyed. A relocation could not be made by radial plot as the exact point is not recoverable on the photos. Its approximate position is on the center line of the swing pier fender. There are no other discrepancies between T-6124 and this compilation.

Described stations TRY, WES, EM and KAN have been transferred to this compilation in the field. SOU (d) is now triangulation station Kearney Point, Western Electric Co. South Twin Chimney, 1931.

Piles, dolphins, and sunken barges have been transferred in this office.

All detail on T-6124 is also shown on this compilation over the common area except the position of described station S. Fender H. R. (d), in error on T-6124, has not been transferred.

A note has been made in green on T-6124 regarding this discrepancy discussed in the first paragraph above.

Comparison with previous topographic surveys

T- 10 (1835), 1:10,000
T- 17 (1837), "
T- 484 (1855), "
T- 610a (1857), "
T- 733 (1858), "
T-1398a (1871), "
T-1398b (1872), "
T-1719 (1885), "

Comparison with the above surveys shows that this compilation is detailed and adequate in order to supersede those portions of the above surveys which it covers. There have been numerous and extensive changes since the time of the old surveys listed above.

T-3431 (1913), 1:10,000

Survey T-3431 covers Newark Bay and the Hackensack River as far north as latitude 40° 43.6'. The following large differences are noted:

(a) The Morris Canal has been removed and a through highway has been built over its former location between 40° 43.3', 74° 05.6' and 40° 42.8', 74° 05.9'.

(b) The second railroad bridge just north of the C.R.R. of N.J. bridge (lat. 40° 43.3') has been removed.

(c) There are many differences of position in the street system of T-3431 and this compilation which can be accounted for only as plane table errors on T-3431.

T-3431 is superseded by this compilation over the common area.

T-3449 (1914), 1:5,000

Survey T-3449 covers portions of the Passaic and Hackensack Rivers. The following large changes are noted as a result of this comparison:

(a) The buildings at 40° 43.6', 74° 06.2' are gone.

(b) The Morris Canal at lat. 40° 43' between longitudes 74° 05.5' and 74° 06' has been abandoned.

(c) The levee shown on T-3449 along the Hackensack River at lat. 40° 44.8' between longitudes 74° 04.6' and 74° 05.6' cannot be seen on the photographs and is probably gone.

(d) The race track and adjacent buildings shown on T-3449 at 40° 44', 74° 05.3' have been removed.

T-3449 is superseded by this compilation over the common area.

T-3490 (1914), 1:5,000

Survey T-3490 covers the Hackensack River between lat. 40° 45' and 40° 48'. T-3490 shows contours. The following large changes have been noted as a result of this comparison:

(a) The buildings shown at 40° 46.5', 74° 07.9' on T-3490 have been removed.

(b) The levee which is shown on T-3490 along the Hackensack River between 40° 44.8', 74° 04.5' and 40° 45.8', 74° 05.5' cannot be seen on the photos under the stereoscope. The difference of elevation here is not very large.

T-3490 is superseded by this compilation over the common area except for contours.

T-3491 (1915), 1:5,000

[redacted]

Clearances

There are two overhead power transmission lines across the Hackensack River in this area. The clearances of these lines is not known.

The Pulaski Skyway Bridge on Route 25 is a fixed bridge. The Coast Pilot calls it a drawbridge (p. 314). This error has been called to the attention of the Coast Pilot Section.

Plane Coordinates

The New Jersey System of Plane Coordinates is shown on this compilation. These coordinates marked by intersections at 5,000 foot intervals were plotted in this office from the geographic positions computed in the Division of Geodesy. Computations are attached at back of this report. Grid plotted by L. A. McGann and checked by B.J. Jones

Sept. 17, 1936.

Reviewed by L. A. McGann.

B.J. Jones

REVIEW OF AIR PHOTO COMPILATION NO. T-5277

Chief of Party: Roswell C. Bolstad Compiled by:(See STATISTICS Sheet.)

Project: Air Photo Compilation Party No. 12 Instructions dated: Nov. 15, 1932.

1. The charts of this area have been examined and topographic information necessary to bring the charts up to date is shown on this compilation. (Par. 16a, b,c,d,e,g and i; 26; and 64)

2. Change in position, or non-existence of wharfs, lights, and other topographic detail of particular importance to navigation which affect the chart, is discussed in the descriptive report. (Par. 26; and 66 g,n)

3. Ground surveys by plane table, sextant, or theodolite have been used to supplement the photographic plot where necessary to obtain complete information, and all such surveys are discussed in the descriptive report. (Par. 65; and 66 d,e)
Graphic control survey T-6124 covers a portion of this compilation in the south west corner.
Lam.

4. Blue-prints and maps from other sources which were transmitted by the field party contain sufficient control for their application to the charts. (Par. 28)

5. Differences between this compilation and contemporary plane table and hydrographic surveys have been examined and rectified in the field before forwarding the compilations to the office and are discussed in the descriptive report.

6. The control and adjustment of the photo plot are discussed in the descriptive report. Unusual or large adjustments are discussed in detail and limits of the area affected are stated. (Par. 12b; 44; and 66 c,h,i)

7. High water line on marshy ~~and~~ coast is clear and adequate for chart compilation. (Par. 16a, 43, and 44)
No sand beach in this area.

NOTE: Strike out paragraphs, words or phrases not applicable and modify those requiring it. Paragraph numbers refer to those in the Topographic Manual. Refer also to the pamphlet "Notes on the Compilation of Planimetric Line Maps from Five Lens Air Photographs." M-87

8. The representation of low water lines, ~~reefs, coral reefs and rocks~~, and legends pertaining to them is satisfactory. (Par. 36, 37, 38, 39, 40, 41) No low water lines shown.

9. Recoverable objects have been located and described on Form 524 in accordance with circular 30, 1933, circular letter of March 3, 1933, and circular 31, 1934. (Par. 29, 30, and 57)
Recoverable described stations filed under T-6124. and under this compilation No T-5277.

10. A list of landmarks was furnished on Form 567 and instructions in the Director's letter of July 16, 1934, Landmarks for Charts, complied with. (Par. 16d, e; and 60)
Previously furnished. See Chart Letter 222 (1933).

11. All bridges shown on the compilation are accompanied by a note stating whether fixed or draw, clearance, and width of draw if a draw bridge. Additional information of importance to navigation is given in the descriptive report. (Par. 16c)

12. Geographic names are shown on the overlay tracing. The accepted local usage of new names has been determined and they are listed in the report, together with a general statement as to source of information and a specific statement when advisable. Complete discussion of place names differing from the charts and from the U. S. G. S. Quadrangles is given in the descriptive report, together with reasons for recommendations made. (Par. 64, and 66k)

13. The geographic datum of the compilation is N.A. 1927 and the reference station is correctly noted.

14. Junctions with adjoining compilations have been examined and are in agreement. (Par. 66j)

15. The drafting is satisfactory and particular attention has been given the following:

    1. Standard symbols authorized by the Board of Surveys and Maps have been used throughout except as noted in the report.

    2. The degrees and minutes of Latitude and Longitude are correctly marked.

3. All station points are exactly marked by fine black dots.

4. Closely spaced lines are drawn sharp and clear for printing.

5. Topographic symbols for similar features are of uniform weight.

6. All drawing has been retouched where partially rubbed off.

7. Buildings are drawn with clear straight lines and square corners where such is the case on the ground.

(Par. 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 48)

16. No additional surveying is recommended at this time.

17. Remarks:

This sheet was compiled in the Baltimore office because of shut-down of the New York office due to lack of funds.

18. Examined and approved;

Roswell C. Bolstad, Jr. H. & G. Engr.,
Chief of Party

19. Remarks after review in office:

Reviewed in office by: L.A. McGann B.J. Jones

Examained and approved:

E. T. Green
Chief, Section of Field Records

Jno. L. Peacock
Chief, Section of Field Work

L. O. Colbert
Chief, Division of Charts

Chief, Division of Hydrography and Topography.